IN THE CLAIMS:

1. (Currently amended) A method for megasonic cleaning a substrate, comprising the steps of:

a) providing a container having side walls on all sides of said container, said container having an overflow;

b) providing a first megasonic transducer with a first active surface or a first array of megasonic transducers with a first array active surface for providing vibrational energy in said container;

c) disposing a substrate in said container within said sidewalls, below said overflow, and substantially parallel to and spaced a first spacing from said first active surface or from said first array active surface;

d) flowing a fluid through said first spacing;

e) immersing the substrate in said fluid in said container, wherein said fluid flows over said overflow; and

f) applying energy to said first megasonic transducer or to said first array of megasonic transducers to provide vibration in said fluid and to clean the substrate wherein substantially all vibration provided in said fluid is from said first megasonic transducer, from said first array of megasonic transducers or from transducers arranged parallel to said first active surface or parallel to said first array active surface ~~no substantially comparable amount of energy is provided to a transducer having an active surface facing perpendicular to said first active surface or perpendicular to said first array~~

~~active surface~~.

2. (Currently Amended) A method as recited in claim 1, further comprising the step of providing relative motion between said ~~individual~~ substrate and said transducer in a direction substantially parallel to the substrate, while performing said fluid-flowing and energy-applying steps (d) and (f).

3. (currently amended) A method as recited in claim 1, wherein said ~~individual~~ substrate has a substrate surface area and said first active surface or said first array active surface has an area at least equal to 40% of the substrate surface area.

4. (previously presented) A method as recited in claim 1, wherein the substrate has a maximum diameter and said first spacing is in a range from 1% to 80% of said maximum diameter.

5. (previously presented) A method as recited in claim 1, wherein said first spacing is in a range from 1 micrometer to 160 millimeters.

6. (previously presented) A method as recited in claim 1, wherein said megasonic energy applied to said first megasonic transducer or said first array of megasonic transducers has a frequency of at least 400 kilohertz.

7. (previously presented) A method as recited in claim 1, wherein said megasonic energy applied to said first megasonic transducer or said first array of megasonic transducers has a maximum power of at least 400 watts.

8. (previously presented) A method as recited in claim 7, wherein said megasonic energy is applied to said first megasonic transducer or said first array of megasonic transducers with 20% to 100% of said maximum power.

9. (previously presented) A method as recited in claim 1, wherein said first megasonic transducer has an area and a total input power and wherein said input power divided by said area is at least four watts per square centimeter.

10. (previously presented) A method as recited in claim 1, wherein said flowing a fluid step (d) comprises flowing a fluid through said first spacing at a fluid flow rate sufficient to carry particles away from the substrate before they redeposit on the substrate.

11. (previously presented) A method as recited in claim 1, wherein said container has a volume and wherein said flowing a fluid step (d) comprises flowing a fluid through said first spacing at a rate to replace the fluid in said volume in less than or equal to one minute.

12. (previously presented) A method as recited in claim 1, further comprising the step of providing a second megasonic transducer with a second active surface or a second array of megasonic transducers with a second array active surface in said tank, wherein said second active surface or said second array active surface faces said first active surface or said first array active surface, and is substantially parallel to and spaced a second spacing from said first active surface or said first array active surface.

13. (previously presented) A method as recited in claim 12, wherein in said providing step (b) said first megasonic transducer or said first array of megasonic transducers and said second megasonic transducer or said second array of megasonic transducers are both completely immersed in said fluid.

14. (previously presented) A method as recited in claim 12, wherein said disposing step (c) comprises disposing the substrate in the tank between said first active surface or said first array active surface and said second active surface or said second array active surface.

15. (previously presented) A method as recited in claim 14, wherein said flowing step (d) further comprises flowing the fluid through said second spacing.

16. (previously presented) A method as recited in claim 15, wherein said applying energy step (f) further comprises applying energy to said second megasonic transducer.

17. (previously presented) A method as recited in claim 12, wherein said transducers first megasonic transducer and said second megasonic transducer provide energy to clean both sides and edges of the substrate.

18. (previously presented) A method as recited in claim 1, wherein said fluid comprises one of deonized water, dilute RCA cleaning solution and dilute citric acid solution.

19. (Canceled)

20. (Canceled)

21. (previously presented) A method as recited in claim 1, wherein in said flowing step (d) fluid is provided in said tank at a lower level than it exits said tank

22. (previously presented) A method as recited in claim 1, wherein in said providing step (b) said first transducer is completely immersed in said fluid.

23. (currently amended) A method for megasonic cleaning a single substrate, comprising the steps of:

a) providing a container comprising a first megasonic transducer with a first active surface arranged in a horizontal plane, wherein said first magasonic transducer is held in a fixed position, and wherein said container has side walls on all sides, said container having an overflow;

b) disposing a single substrate in said container within said sidewalls, below said overflow, and substantially parallel to and spaced a spacing from said first active surface or said first array active surface;

c) immersing the single substrate in a fluid and flowing said a fluid through said spacing, wherein said fluid flows over said overflow; and

d) applying energy to said first megasonic transducer wherein substantially all vibration provided in said fluid is from said first megasonic transducer, from said first array of megasonic transducers, or from transducers arranged parallel to said first active surface or parallel to said first array active surface.

24-40. (Canceled)

41. (Currently amended) An apparatus for megasonic cleaning a substrate, comprising:

a container for immersing a substrate in a fluid, wherein said container has side walls on all sides, said container having an overflow;

a first megasonic transducer with a first active surface or a first array of megasonic transducers with a first array active surface for providing energy to clean the immersed substrate when the substrate is placed within said sidewalls, below said overflow, and substantially parallel to and spaced from said first active surface or from said first array active surface, wherein substantially all vibration provided in said fluid is from said first megasonic transducer, from said first array of megasonic transducers, or from transducers arranged parallel to said first active surface or parallel to said first array active surface ~~wherein no transducer is in said container having an active surface facing perpendicular to said first active surface or perpendicular to said first array active surface~~.

42. (previously presented) An apparatus as recited in claim 41, further comprising means for providing relative motion between the substrate and said first megasonic transducer or said first array of megasonic transducers in a direction substantially parallel to said first active surface or said first array active surface while flowing said fluid and applying said megasonic energy.

43. (previously presented) An apparatus as recited in claim 41, wherein the substrate has a major surface area and the substrate is disposed so that said first transducer or said first array of megasonic transducers faces at least 40% of said major substrate surface area.

44. (previously presented) An apparatus as recited in claim 41, wherein said substrate has a maximum diameter and the immersed substrate is spaced a distance in a range from 1% to 80% of said maximum diameter.

45. (previously presented) An apparatus as recited in claim 41, wherein the immersed substrate is spaced a distance in a range from 1 micrometer to 160 millimeters.

46. (previously presented) An apparatus as recited in claim 41, wherein megasonic energy applied to said first megasonic transducer or said first array of megasonic transducers has a maximum power of at least 400 watts.

47. (previously presented) An apparatus as recited in claim 46, wherein said megasonic energy applied to said first megasonic transducer has 20% to 100% of said maximum power.

48. (previously presented) An apparatus as recited in claim 41, wherein said first transducer or said first array of megasonic transducers has a total input power and wherein said first active surface or said first array active surface has an area wherein said input power divided by said area is at least four watts per square centimeter.

49. (previously presented) An apparatus as recited in claim 41, further comprising a second megasonic transducer with a second active surface or a second array of megasonic transistors with a second array active surface in said container, wherein said second active surface or said second array active surface faces said first active surface or said first array active surface and is substantially parallel to and spaced from said first active surface or said first array active surface for cleaning both sides of a substrate and edges of a substrate placed between said first active surface or said first array active surface and said second active surface or said second array active surface .

50. (previously presented) An apparatus as recited in claim 49, wherein said first megansonic transducer and said second megasonic transducer are disposed vertically.

51. (Cancel)

52. (previously presented) An apparatus as recited in claim 49, wherein said first array of transducers are disposed horizontally and wherein openings between transducers of said first array of transistors permit fluid to flow there through.

53. (previously presented) An apparatus as recited in claim 49, wherein said first transducer or said first array of transistors is in a fixed position and said second transducer or said second array of transistors is moveable.

54. (previously presented) An apparatus as recited in claim 49, wherein said first transducer or said first array of transistors and said second transducer or said second array of transistors are both completely immersed in said fluid.

55. (previously presented) An apparatus as recited in claim 41, wherein said fluid comprises one of deionized water, RCA cleaning solution and citric acid solution.

56. (previously presented) An apparatus as recited in claim 41, wherein said first active surface or said first array active surface is arranged in a horizontal plane.

57. (previously presented) An apparatus as recited in claim 41, wherein said first active surface or said first array active surface is arranged in a vertical plane.

58. (previously presented) An apparatus as recited in claim 41, wherein said first transducer or said first array of transistors is completely immersed in said fluid.

59. (Currently Amended) A method for megasonic cleaning a single substrate, comprising the steps of:

(a) providing a container having side walls on all sides of said container, said container having an overflow;

(b) providing a first megasonic transducer with a first active surface or a first array of megasonic transducers with a first array active surface, wherein said first active surface or said first array active surface is arranged in a horizontal plane to provide megasonic vibration in said container;

(c) disposing a single substrate in said container within said sidewalls, below said overflow, facing, substantially parallel to, and spaced a first spacing from said first active surface or said first array active surface, wherein said single substrate is within said sidewalls and below said top edge;

(d) providing a fluid in said container, immersing ~~the~~ said single substrate in said fluid, and flowing said fluid through said spacing, wherein said fluid flows over said overflow; and

(e) applying energy to said first megasonic transducer, wherein substantially all vibration provided in said fluid is from said first megasonic transducer, from said first array of megasonic transducers, or from transducers arranged parallel to said first active surface or parallel to said first array active surface.

60. (Currently Amended) A method as recited in claim 59, wherein said ~~individual~~ single substrate has a substrate surface area and said first active surface or said first array active surface has an area at least equal to 40% of the substrate surface area.

61. (Currently Amended) A method as recited in claim 59, wherein said ~~individual~~ single substrate has a substrate surface and said first megasonic transducer or said first array of megasonic transducers is larger than said substrate surface.

62. (Currently Amended) A method as recited in claim 59, wherein the single substrate has a maximum diameter and said first spacing is in a range from 1% to 80% of said maximum diameter.

63. (previously presented) A method as recited in claim 59, wherein said first spacing is in a range from 1 micrometer to 160 millimeters.

64. (previously presented) A method as recited in claim 59, wherein said megasonic energy applied to said first megasonic transducer or said first array of megasonic transducers has a frequency of at least 400 kilohertz.

65. (previously presented) A method as recited in claim 59, wherein said megasonic energy applied to said first megasonic transducer or said first array of megasonic transducers has a maximum power of at least 400 watts.

66. (previously presented) A method as recited in claim 65, wherein said megasonic energy is applied to said first megasonic transducer or said first array of megasonic transducers with 20% to 100% of said maximum power.

67. (previously presented) A method as recited in claim 59, wherein said first megasonic transducer has an area and a total input power and wherein said input power divided by said transducer area is at least four watts per square centimeter.

68. (Currently Amended) A method as recited in claim 59, wherein said flowing a fluid step (d) comprises flowing a fluid through said space between the single substrate and said transducer first spacing at a fluid flow rate sufficient to carry particles away from the single substrate before they redeposit on the single substrate.

69. (Currently Amended) A method as recited in claim 59, wherein said container has a volume and wherein said flowing a fluid step (d) comprises flowing a fluid through said space between the single substrate and said transducer first spacing at a rate to replace the fluid in said volume in less than or equal to one minute.

70. (previously presented) A method as recited in claim 59, further comprising the step of providing a second megasonic transducer with a second active surface or a second array of megasonic transducers with a second array active surface in said tank, wherein said second active surface or said second array active surface faces said first active surface or said first array active surface, and is substantially parallel to and spaced a second spacing from said first active surface or said first array active surface.

71. (previously presented) A method as recited in claim 70, wherein in said providing step (b) said first megasonic transducer or said first array of megasonic transducers and said second megasonic transducer or said second array of megasonic transducers are both completely immersed in said fluid.

72. (Currently Amended) A method as recited in claim 70, wherein said disposing step (c) comprises disposing the single substrate in the tank between said first active surface or said first array active surface and said second active surface or said second array active surface.

73. (previously presented) A method as recited in claim 72, wherein said flowing step (d) further comprises flowing the fluid through said second spacing.

74. (previously presented) A method as recited in claim 73, wherein said applying energy step (f) further comprises applying energy to said second megasonic transducer.

75. (Currently Amended) A method as recited in claim 70, wherein said first megasonic transducer and said second megasonic transducer provide energy to clean both sides and edges of the single substrate.

76. (previously presented) A method as recited in claim 59, wherein said fluid comprises one of deonized water, dilute RCA cleaning solution and dilute citric acid solution.

77. (previously presented) A method as recited in claim 1, wherein said first megasonic transducer or said first array of megasonic transducers is larger than said substrate.

78. (previously presented) A method as recited in claim 23, wherein said first megasonic transducer is larger than said single substrate.

79. (previously presented) A method as recited in claim 41, wherein said first megasonic transducer or said first array of megasonic transducers is larger than said substrate.

80. (new) The method as recited in claim 1, wherein in said providing step (b) said first active surface or said first array active surface is arranged in a horizontal plane.

81. (new) The method as recited in claim 1, wherein in said providing step (b) said first active surface or said first array active surface is arranged in a vertical plane.